

**Remarks/Arguments**

**I. Status of the Claims:**

Claims 1 – 9, 12 – 14, 18 – 21, 71, 73, 75, 77, 79 – 82, 85 – 91, 94 – 101 and 103 – 115 stand rejected. Claim 77 is allowed. Claims 18 and 73 are objected to as being dependent on a rejected base claims, but would be allowable if re-written in independent form. Claims 1 and 71 are presently amended. No claims have been added or cancelled with this response. Claims 1 – 9, 12 – 14, 18 – 21, 71, 73, 75, 77, 79 – 82, 85 – 91, 94 – 101 and 103 – 115 are pending in the case.

**II. Rejections Under 35 U.S.C. § 103(a):**

Claims 1-4, 71, 85-87, 91 and 94-101, 105, 106 and 107 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 3,715,295 to Tocci ( "Tocci") in view of U.S. Patent No. 3,888,759 to Elson, *et al.* ( "Elson"). Applicant respectfully traverses these rejections for at least the reasons set forth below.

While Applicant maintains that neither Tocci nor Elson, taken alone or in combination, teach or suggest the combination of features found in the instant claims, claims 1 and 71 have nevertheless been amended for clarification, solely in the interest of advancing prosecution of the case, and without agreeing with or acquiescing to the Examiner's arguments regarding the validity of the claims in view of the prior art references. Claims 1 and 71 have been amended to include the feature "an electrophoresis gel matrix, said electrophoresis gel matrix comprising one or more wells located below the apertures; wherein the electrophoresis gel matrix substantially occupies the first region, the second region and the third region, and wherein at least a portion of the anode and the cathode are in contact with the electrophoresis gel matrix".

Applicant respectfully submits that Tocci fails to teach or to suggest at least the feature "an anode located within either the second region or the first region; a cathode located within either the second region or the first region, provided that the anode and the cathode are not together in the same region" or the feature "an electrophoresis gel matrix ... (that) substantially occupies first region, the second region and the third region". Applicant notes that on page 4 of the office action,

the Examiner states "[s]ince the claim recites that the chamber 'comprises' the first, second and third regions, the claim is considered to be open to the presence of regions other than those explicitly recited" (office action, page 4, lines 11 - 13). Additionally, on page 17 of the office action, the Examiner states that "the portions of vessel 6 and 7 that contain the semisolid buffer of Tocci are not considered to be parts of the first and second regions" (Office action, page 17, lines 1 and 2). Applicant respectfully disagrees with the Examiner's application of the Tocci reference to the instant claims.

Specifically, the Examiner has chosen to interpret the claims in such a way that Tocci's buffer vessels 6 and 7, which contain the semi-solid buffer, are "are not considered to be parts of the first and second regions" (see above). Yet in Tocci's system, the electrodes (i.e., the anode and the cathode) are positioned in the buffer wells. In this regard, Tocci states "[a]n electrode of suitable electrical conducting properties is provided for retention within each of the buffer wells as a foil. The foil is shaped to substantially fit within the wells. Each foil electrode may have an outwardly extending tab portion which is adapted to protrude from the well". (Tocci, Col. 3, lines 31 - 36). Additionally, Figure 2 clearly indicates that "[a] foil electrode 8 of suitable conducting properties is provided for retention within each of the buffer vessels 6 and 7 and is shaped to substantially fit within the vessels 6 and 7" (col. 4, lines 46 - 49, *Emphasis added*). Finally, Figs. 4 and 5 of Tocci show "a foil electrode (i.e., electrode 8) in the operable position". In this depiction, electrode 8 clearly resides in buffer chambers 6 and 7. Tocci does not appear to contemplate positioning the electrodes anywhere other than buffer chambers 6 and 7. Specifically, Tocci does not appear to contemplate positioning the electrodes in region 12 of the apparatus.

However, the instant claims recite the feature "an anode located within either the second region or the first region; a cathode located within either the second region or the first region, provided that the anode and the cathode are not together in the same region" (see instant claims 1 and 71, *Emphasis added*). Therefore, since the claims require that the anode and the cathode each be positioned in one or the other of regions 1 and 2, and since Tocci teaches that the electrodes are positioned in buffer chambers 6 and 7, the only way that Tocci could be interpreted to read on the instant claims would be if buffer chambers 6 and 7 were analogous to the instantly claimed regions 1 and 2. In other words, according to the Examiner's own reading of Tocci, buffer vessels 6 and 7, and the electrodes positioned therein, are excluded from the instantly claimed regions 1 and 2 which, according to the Examiner's statements, must

be encompassed by Tocci's sheet 12 (See, e.g., Col. 4, lines 57 - 61, which states "[a] sheet 12 positioned across the top of the two wells 6 and 7 has an intermediate support portion adapted to receive and hold a suitable medium for electrophoresis"). Applicant respectfully submits that such a reading of Tocci is inconsistent with the instant claims. In order to read on the instant claims, Tocci's buffer vessels 6 and 7, which contain the electrodes, must read on regions 1 and 2, which also contain electrodes. The Examiner's reading of Tocci as stated on page 17 places the electrodes outside of regions 1 and 2, and therefore outside the scope of the claims. As such, Applicant submits that the Tocci reference does not read on the instantly claimed features "an anode located within the second region or the first region; a cathode located within the second region or the first region, provided that the anode and the cathode are not together in the same region".

Additionally, Applicant respectfully submits that Tocci fails to teach or suggest the feature "wherein the electrophoresis gel matrix substantially occupies the first region, the second region and the third region, and wherein at least a portion of the anode and the cathode are in contact with the electrophoresis gel matrix". Instead, Tocci only appears to contemplate the electrodes being electrically coupled to the gel (i.e., "the medium") through the semi-solid buffer occupying the buffer wells (wells 6 and 7). In this regard, Tocci clearly states:

A foil electrode 8 of suitable conducting properties is provided for retention within each of the buffer vessels 6 and 7 and is shaped to substantially fit within the vessels 6 and 7 as seen in FIG. 2. ... A sheet 12 positioned across the top of the two wells 6 and 7 has an intermediate support portion adapted to receive and hold a suitable medium for electrophoresis. The medium is in electrical contact with the semi-solid buffer in buffer vessels 6 and 7" (Tocci, Col. 4, lines 46 - 63; *Emphasis added*).

Note that in Tocci, the electrophoresis gel is referred to as a "support medium" or "transport medium", and this medium is separate and distinct from the semi-solid buffer that electrically connects the electrodes with the "support medium" (see, e.g., Col. 2, lines 55 - 64, which states in part, "[a] support medium, comprising for example, paper, a cellulose acetate strip, a thin layer plate on a plastic backing, or agar gel is placed at the top of the tank. A buffer can be spread on the support medium. ... The sample to be separated ... is then applied to the support medium which is in contact with the semi-solid buffer in each end of the well").

Therefore, in Tocci's system, electrical current provided by the electrodes appears to be electrically coupled to the gel (i.e., the support medium) through the semi-solid buffer. Nowhere in Tocci appears to contemplate contacting the electrodes with the support medium.

Therefore, for at least the reasons stated above, Applicant respectfully submits that Tocci fails to teach or suggest at least the features "an anode located within either the second region or the first region; a cathode located within either the second region or the first region, provided that the anode and the cathode are not together in the same region; and an electrophoresis gel matrix, said electrophoresis gel matrix comprising one or more wells located below the apertures; wherein the electrophoresis gel matrix substantially occupies the first region, the second region and the third region, and wherein at least a portion of the anode and the cathode are in contact with the electrophoresis gel matrix". Moreover, neither Elson, nor any of the other prior art references cited against the instant claims, corrects these deficiencies.

In light of the above, Applicant submits that a *prima facie* case of obviousness against the instant claims has not been established, since the prior art references, taken alone or in combination, do not teach or suggest all the limitations of claims 1-4, 71, 85-87, 91 and 94-101, 105, 106 and 107. Accordingly, Applicant submits that the claims are unobvious over the combination of Tocci and Elson, and respectfully requests that the rejections thereof under 35 U.S.C. §103(a) be withdrawn.

Claims 5, 6, 63, 64, 75, 88 and 108 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci in view of Elson as applied above, and further in view of Pace. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments with regard to the Tocci and the Elson references presented above and incorporated herein. Specifically, Pace does not remedy the deficiencies of either Tocci or Elson in the context of claims 1 and 71. Accordingly, Applicant submits the claims 5, 6, 75, 88 and 105 are unobvious over the combination of Tocci, Elson and Pace.

Claims 7-9 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci in view of Elson as applied above, and further in view of Eibl. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, Eibl does not remedy the deficiencies of either Tocci or Elson in the context of claims

1 and 71. Accordingly, Applicant submits the claims 7 – 9 are unobvious over the combination of Tocci, Elson and Eibl.

Claims 19-21 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci in view of Elson as applied above, and further in view of Flesher. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, Flesher does not remedy the deficiencies of either Tocci or Elson in the context of claims 1 and 71. Accordingly, Applicant submits the claims 19-21 are unobvious over the combination of Tocci, Elson and Flesher.

Claims 12-14 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci in view of Elson as applied above, and further in view of Day. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, Day does not remedy the deficiencies of either Tocci or Elson in the context of claims 1 and 71. Accordingly, Applicant submits the claims 12-14 are unobvious over the combination of Tocci, Elson and Day.

Claims 81, 82, 90, 103, 104, 110 and 11 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci as applied above, and further in view of Monthony. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, Monthony does not remedy the deficiencies of either Tocci or Elson in the context of claims 1 and 71. Accordingly, Applicant submits the claims 81, 82, 90, 103, 104, 110 and 111 are unobvious over the combination of Tocci, Elson and Monthony.

Claims 79 and 80 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci, Elson, Pace and Monthony. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, neither Monthony nor Pace, nor their combination, remedy the deficiencies of either Tocci or Elson in the

context of claims 1 and 71. Accordingly, Applicant submits the claims 79 and 80 are unobvious over the combination of Tocci, Elson, Pace and Monthony.

Claim 109 stands rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci, Elson, Monthony and Eibl. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, neither Monthony nor Eibl, nor their combination, remedy the deficiencies of either Tocci or Elson in the context of claims 1 and 71. Accordingly, Applicant submits the claim 109 is unobvious over the combination of Tocci, Elson, Monthony and Eibl.

Claims 112-114 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over the Tocci, Elson, Monthony and Day. While Applicant disagrees with the substance of these rejections, they are nevertheless believed to be moot in light of the amendments made to claim 1 and 71 and the arguments presented above with regard to the Tocci and Elson references and incorporated herein. Specifically, neither Monthony nor Day, nor their combination, remedy the deficiencies of either Tocci or Elson in the context of claims 1 and 71. Accordingly, Applicant submits the claims 11-114 are unobvious over the combination of Tocci, Elson, Monthony and Day.

In light of the above, Applicant respectfully submits that the claims are unobvious over the cited references. Accordingly, Applicant respectfully requests the removal of all outstanding rejections under 35 U.S.C. §103 rejections.

**CONCLUSION**

Applicant hereby respectfully petitions under 37 C.F.R. § 1.136(a) a three (3)-month extension of time for submission of this response and submits the required extension fee via electronic filing. Any additional fees (including but not limited to appropriate petition fees or fees for net addition of claims) are hereby authorized to be charged to our **Deposit Account No. 50-3994**, from which the undersigned is authorized to draw funds.

Respectfully submitted,

/Jonathan P. Aumais/

Jonathan P. Aumais, Ph.D.

Reg. No. L0431

AGENT FOR APPLICANT(S)

**LIFE TECHNOLOGIES CORPORATION**

Intellectual Property Department

5981 Van Allen Way

Carlsbad, CA 92008

Phone: (760) 476-6271

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